TransCanada PipeLines

Annual Report 1977

AR34

Directors and Officers

Directors

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Executive Vice President
TransCanada PipeLines, Toronto

Robert W. Campbell
Chairman and Chief Executive Officer
PanCanadian Petroleum Limited, Calgary

John H. C. Clarry, Q.C.
Messrs. McCarthy & McCarthy, Toronto

John H. Coleman
President
J. H. C. Associates Limited, Toronto

A. Jean de Grandpré, Q.C.
Chairman and Chief Executive Officer
Bell Canada, Montreal

Russell E. Harrison
Chairman and Chief Executive Officer
Canadian Imperial Bank of Commerce, Toronto

James W. Kerr
Chairman and Chief Executive Officer
TransCanada PipeLines, Toronto

A. Deane Nesbitt, O.B.E., D.F.C.
Chairman
Nesbitt, Thomson and Company, Limited, Montreal *(Deceased February 1978)*

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Vice Chairman and Chief Executive Officer
British Steel Corporation (Canada) Limited, Toronto

Herbert C. Pinder
President
Saskatoon Trading Company Limited, Saskatoon

Smiley Raborn, Jr.
Chairman and Chief Executive Officer
CanDel Oil Ltd., Calgary

Frank A. Schultz
Independent Oil Operator, Dallas

Ian D. Sinclair, Q.C.
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Canadian Pacific Limited, Montreal

John M. Taylor
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PanCanadian Petroleum Limited, Calgary

J. Ross Tolmie, Q.C.
Messrs. Herridge, Tolmie, Ottawa

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President
TransCanada PipeLines, Toronto

Principal Officers

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George W. Woods, F.C.A.
President

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Executive Vice President

Walter Hindle, P.Eng.
Group Vice President

John K. Archambault
Vice President and General Counsel

Gordon A. Leslie, P.Geol.
Vice President
Customer Relations and Planning

C. Kennedy Orr, C.A.
Vice President, Alberta Affairs

Richard D. Walker, P.Eng.
Vice President, Gas Transmission

John G. C. Weir
Vice President, Corporate Services

George C. Britton, P.Eng.
Vice President
Engineering and Operations – Pipeline

Bruce M. Escoffery, P. Eng.
Vice President, Rates

George M. Hugh, P.Eng.
Vice President
Engineering and Operations – Compression

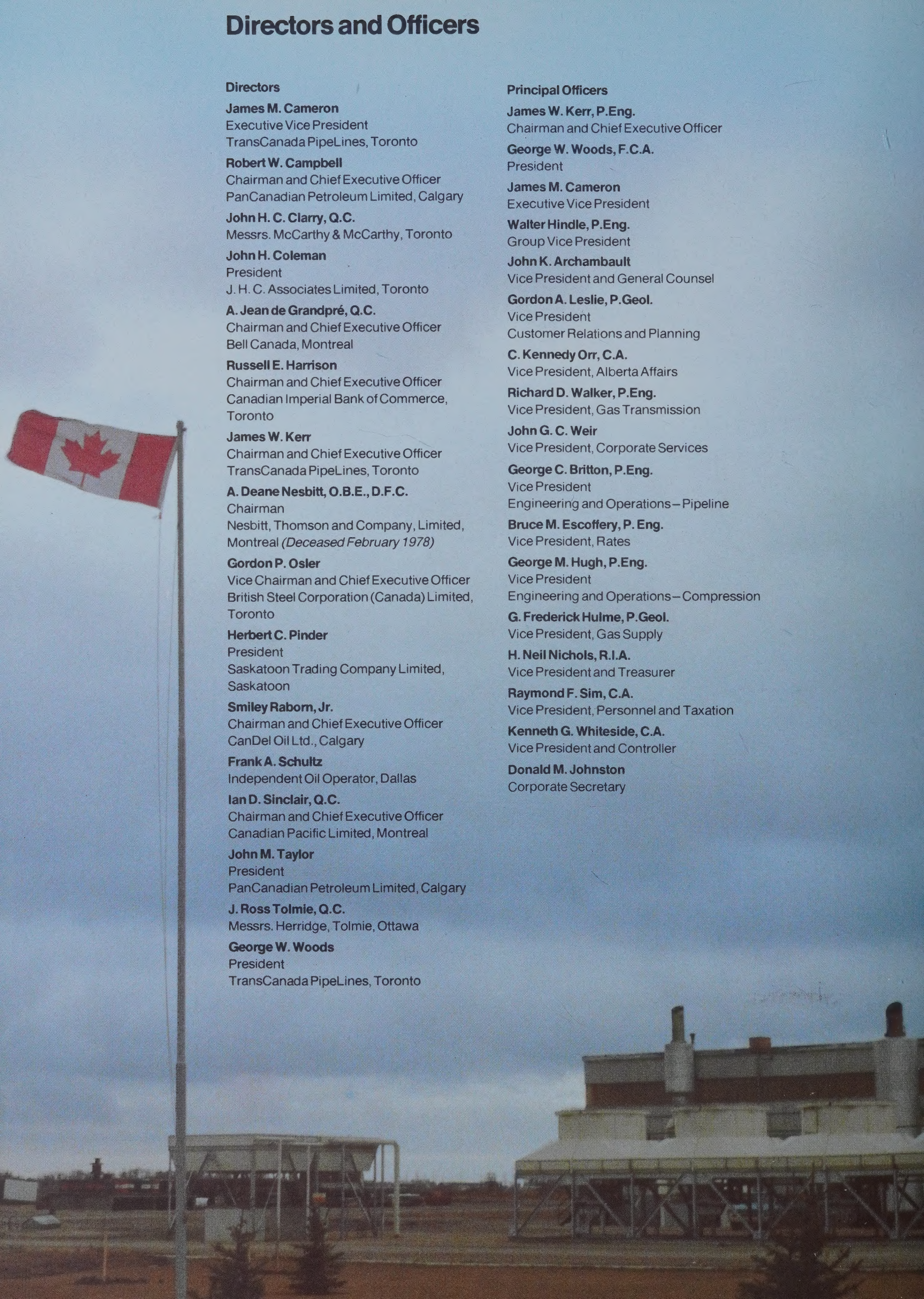
G. Frederick Hulme, P.Geol.
Vice President, Gas Supply

H. Neil Nichols, R.I.A.
Vice President and Treasurer

Raymond F. Sim, C.A.
Vice President, Personnel and Taxation

Kenneth G. Whiteside, C.A.
Vice President and Controller

Donald M. Johnston
Corporate Secretary



Highlights

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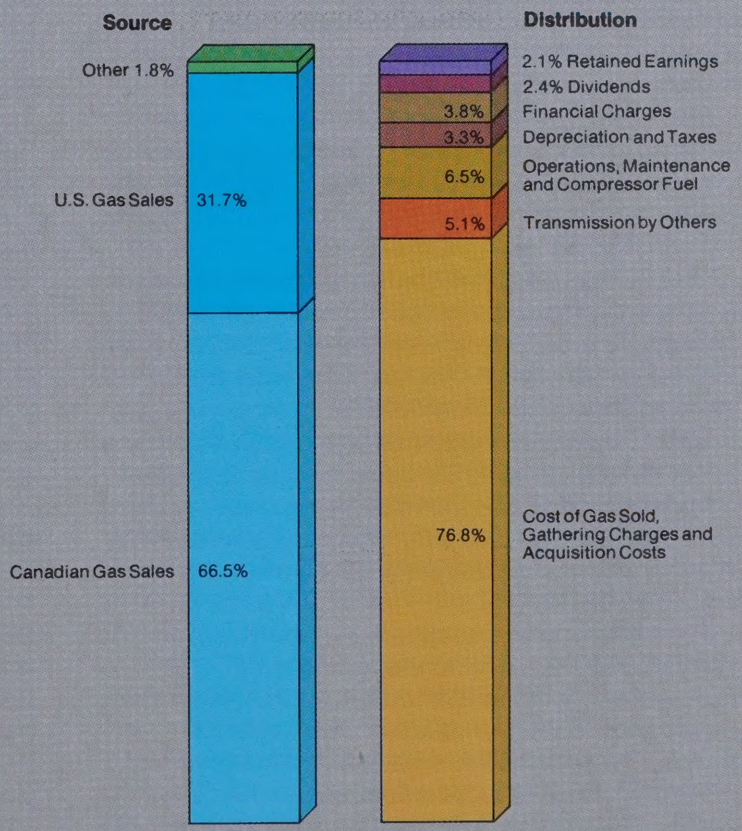
	1977	1976
Operations	**($000)**	($000)
Operating revenues	**1,870,325**	1,499,137
Operating income	**142,761**	134,932
Net income	**86,183**	79,635
Funds provided from operations	**131,744**	127,161
Dividends declared		
Preferred shares	**7,786**	9,960
Common shares	**37,922**	31,414
Net income per common share		
Basic	**$ 2.01**	$ 1.92
Fully diluted	**1.95**	1.79
Dividends declared, per common share	**.97**	.85¾
Gas transmission plant	**($000)**	($000)
Gross plant	**1,720,910**	1,637,789
Gas delivered for sales and transportation (millions of cubic feet)		
Annual volume	**1,170,343**	1,127,982

1977 Revenue Dollar



Left, Compressor Station 2, Burstall, Saskatchewan

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Report to Shareholders

In 1977 TransCanada PipeLines' net income reached its most satisfactory level in 19 years of operation. These favorable results were mainly due to abnormally cold weather last winter and to emergency sales to the United States.

The financial highlights of 1977 included

- — an increase in net income to $86,183,000, up from $79,635,000 in 1976.
- — new record revenues of $1,870,325,000, reflecting the higher prices that followed the increased field costs of natural gas.
- — an increase in earnings from Great Lakes Gas Transmission Company, to $9,411,000, up from $8,329,000 in 1976.
- — an increase in earnings per common share to $2.01 compared to $1.92 in 1976, after an 8.1% increase in the average number of outstanding common shares.
- — an increase in the annual rate of dividends per common share from 95¢ payable at the commencement of 1977 to $1.03 commencing in January 1978, the maximum permitted by the Anti-Inflation Board.

While the 1977 operating results are gratifying to your Directors, it must be pointed out that the unusual circumstances experienced during the year countered the effects of the levelling of natural gas sales in many areas of Canada. The rate of annual growth in new sales has declined, in spite of the availability of additional volumes of natural gas under long-term contracts.

High costs of energy in Canada have resulted in conservation measures being adopted in many industries. The introduction of the commodity value or market value concept of marketing natural gas in Canada has caused regulated natural gas prices to increase faster than the price of competitive fuels. This, coupled with excess refining capacity in central Canada, has placed gas at price levels which are not competitive with other fuels in many industrial markets.

On January 1, 1977, the Toronto city gate or wholesale price of natural gas was $1.505 per MMBtu. On August 1, 1977 the Toronto city gate price of natural gas increased to $1.68 per MMBtu. On February 1, 1978, the price increased again to $1.85 per MMBtu.

Under the retail selling prices resulting from these price increases, existing Canadian energy markets are not presently absorbing the volumes of western Canadian gas available from producers. If this situation continues for an extended period, exploration activity could be reduced.

The increase in the gas supply of western Canada since 1975 as a result of increased drilling and exploration activity has been considerable. While more development drilling is required to delineate new discoveries, it now appears that reserves in traditional producing areas will support domestic markets and current export contracts for natural gas until at least 1985.

It is important that exploration and development efforts be continued at a high level to provide the required future oil and gas supplies from western Canada. As a major purchaser of natural gas for use outside Alberta, TransCanada PipeLines is actively endeavouring to ease the problems being encountered by Canadian gas producers because of the current gas surplus. During 1977 TransCanada purchased additional Alberta natural gas reserves for delivery commencing no later than 1980. TransCanada has also made application to the Energy Resources Conservation Board of Alberta to increase the volumes of gas it may remove from the Province of Alberta by 7.4 Tcf to a total of 31.1 Tcf.

TransCanada is exploring, with several United States pipeline and distribution companies, the possibility of predeliveries under existing gas export contracts, or exchange arrangements under which additional exported Canadian gas would be replaced by Alaskan gas at a later date. An improvement in the short-term natural gas supply situation in the United States as a result of increased drilling, improved industrial conservation of natural gas, and conversion to other fuels by industry, and delays in domestic United States pricing policy decisions have delayed negotiations of new arrangements.

TransCanada PipeLines has undertaken a study in depth of the additional markets for natural gas in the Province of Quebec, and will file an application shortly seeking approval of the eastward expansion of its pipeline facilities. At the present time natural gas service is available in the province in areas which contain over 50% of the population and nearly 60% of Quebec's industry. An expansion eastward to Quebec City would make natural gas available to nearly 60% of the population.

In 1977 TransCanada paid producers for about 7 Bcf of gas which it was unable to take into its system. In 1978 it is anticipated that there may be a material increase in the volumes paid for but not taken. However, your management believes it will be possible to take delivery of all such gas within the time period provided in the gas purchase contracts.

In July, 1977, the National Energy Board recommended to the Canadian Government that no pipeline be constructed at the present time in the Mackenzie Valley. Instead, the Board recommended that the Foothills (Yukon) project for an express 48-inch line from Alaska through the Yukon and generally along existing highway routes in northern British Columbia and Alberta, be built to transport natural gas from Alaska to the "lower 48" United States. A modification of the National Energy Board recommendation was incorporated in an agreement between the Governments of Canada and the United States late in 1977. In February, 1978, the National Energy Board

J. W. Kerr, Chairman and Chief Executive Officer, G. W. Woods, President and J. M. Cameron, Executive Vice President

indicated a preference for 56-inch diameter pipe with an operating pressure of 1080 psi. The Canadian Parliament also commenced consideration of the Northern Pipeline Act in February, 1978. The Foothills (Yukon) project envisages that Mackenzie Delta and Beaufort Sea reserves be attached, if economically feasible, to the express line in the future. In August, 1977, TransCanada agreed in principle to participate in the Foothills (Yukon) project, and to acquire 20% of the equity of Foothills Pipe Lines (Yukon) Ltd., the sponsor of the project.

The Company is continuing its discussions with Foothills Pipe Lines (Yukon) Ltd. in connection with its proposed participation in the Foothills (Yukon) project.

On December 21, 1977, the Polar Gas project, which is managed by your Company, filed with the National Energy Board the initial sections of an application to construct a pipeline from the Arctic Islands to southern Canada. Further drilling to increase the natural gas reserves available to this project is continuing during early 1978.

In December, 1977, the National Energy Board conditionally approved the construction by Tenneco LNG Inc. of a Liquefied Natural Gas (LNG) regasification plant at Saint John, New Brunswick, to receive deliveries of LNG from Algeria. As part of the overall project, TransCanada PipeLines (New Brunswick) Limited, a wholly-owned subsidiary of your Company, plans to construct in 1981 a 66-mile 36-inch diameter pipeline from the regasification plant to a connecting United States pipeline on the Maine/New Brunswick border. This project is still subject to further approval by the Department of Energy of the United States, and is also now subject to cancellation by Algeria, the supplier of the LNG.

Studies were continued of a possible future TransCanada project to transport Arctic Islands reserves, which are too small to justify pipeline construction, by LNG icebreaker carriers to the Quebec City area. Results of these studies continue to be encouraging.

Because of the encouraging results of recent exploration activities in Alberta, the application of conservation measures and the sluggish performance of the Canadian economy, the need for the attachment of frontier gas reserves is not as immediate as it appeared a year ago. However, there is a limit to the total volume of gas which will be ultimately found surplus to the needs of Alberta, and it is therefore imperative that efforts be maintained to ensure that gas will be available from frontier sources when it is required. Long lead times are associated with all frontier projects and there must be continued efforts to attach these reserves to markets in the south.

During 1977 your Company continued to improve the efficiency and safety of its system and its ability to respond to emergency conditions. Over 600 construction projects were involved in the 1977 program. These included the completion of retesting of the original 30-inch line between Toronto and Winnipeg,

and requalification of over 100 miles of 20-inch line between Toronto and Montreal as well as the construction of 57 miles of 42-inch line to complete the third loopline from Burstall to Winnipeg. Original pipe was also replaced with thicker-wall pipe in several areas, because of an increase in population density.

In 1978, reflecting the slowdown in growth of natural gas markets serviced by the Company, it is presently estimated that direct capital costs in expanding and improving the Company's system will be approximately $40,000,000.

In September of 1977 TransCanada sold $75,000,000 of 9.60% Sinking Fund Debentures Series G, due 1997. At the present time it is not anticipated that there will be any major long term financing requirements by the Company in 1978.

During the year the Company continued to participate in research programs connected with high impact welding. The electronic pig developed by the Company was used on the Company's system and on several other gas and oil transmission systems.

TransCanada also continued a study to electrolyse water in Manitoba for the production of large volumes of hydrogen for blending into the natural gas stream and other purposes. Heavy water would be produced as a by-product of this electrolysis.

A number of engineering assignments were undertaken in Europe by the Company's engineering subsidiary, International PipeLine Engineering Limited. These projects, awarded in competitive bidding in Great Britain, Denmark and Hungary, reflected the Company's growing international reputation for technological expertise in the operation of a natural gas transmission system, in compressor station design and in computer application to pipeline operations.

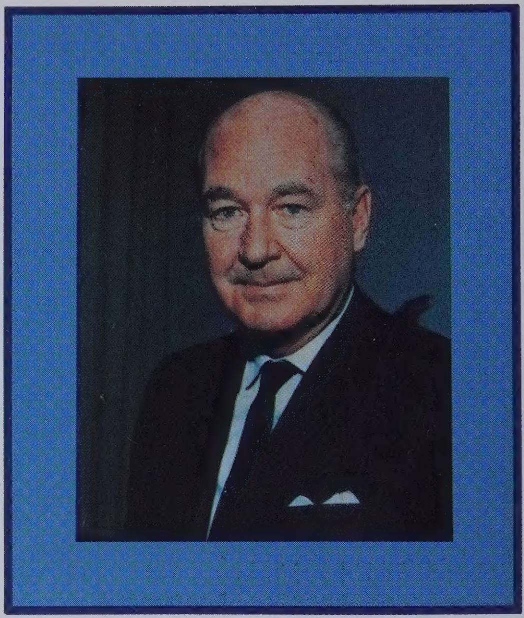
In February 1978 the Company suffered a serious loss when A. Deane Nesbitt passed away. Mr. Nesbitt will be greatly missed by the Board of Directors.

Following the Annual Meeting of Shareholders in April of 1977, an internal realignment of management organization was carried out to reflect the Company's increased activity in Alberta and the increased emphasis which must be given to marketing and system operating efficiency. Details of this realignment will be found in the section entitled "Organization."

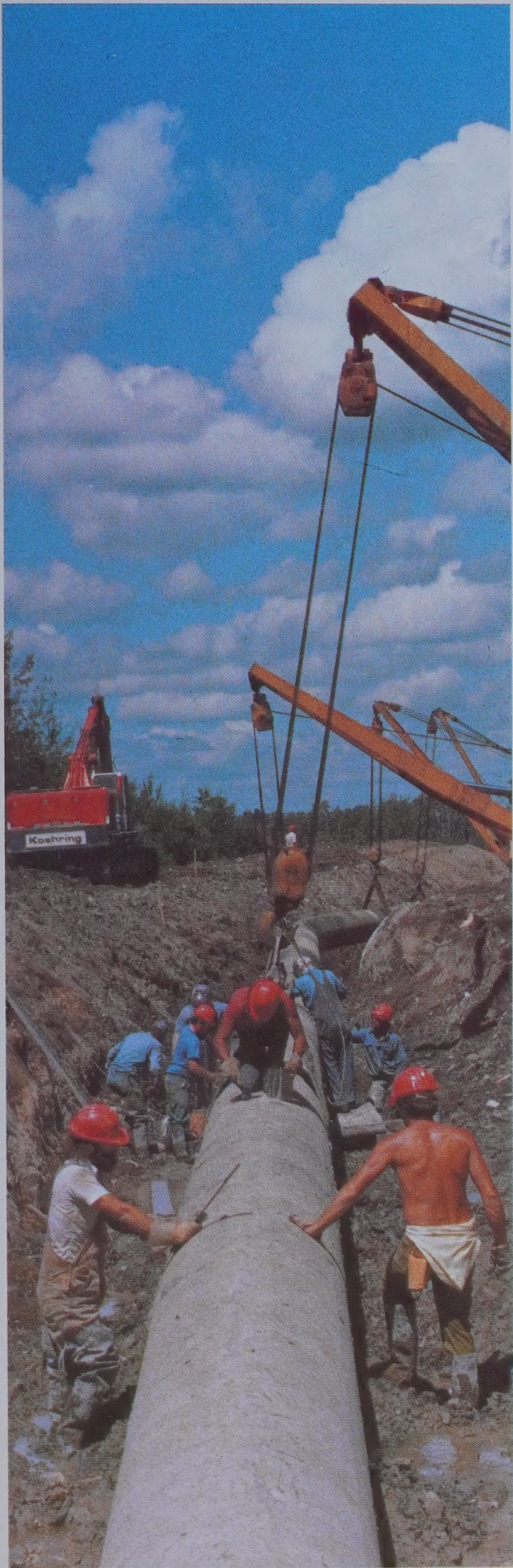
The abilities and skills of TransCanada employees continued to be a great strength in the Company. During a period of unexpected changes and many challenges, their loyalty, their dedicated efforts and their sound judgement have been important ingredients in the continued progress of the Company. The Directors take this opportunity of extending sincere thanks to all the men and women of the Company.

On behalf of the Board,

Chairman and Chief Executive Officer
March 7, 1978



The Directors and employees of TransCanada PipeLines were deeply saddened by the tragic death of A. Deane Nesbitt in late February, 1978, following a skiing accident. Deane Nesbitt's contribution to Canada as a fighter pilot and senior officer of the R.C.A.F. during World War II, and his contributions during the years that followed at national, provincial and community levels, will always be an inspiration to his fellow Canadians. Mr. Nesbitt had been a member of TransCanada's Board of Directors since 1954. In addition to being the Company's leading financial advisor, Mr. Nesbitt was instrumental in raising the large amounts of capital required in the nineteen years of continuous expansion of the Company's facilities which followed the completion of the initial pipeline system. He also was a financial witness on behalf of the Company at several major regulatory hearings, and served on several committees of the Board of Directors over his 24-year term as a Director. Deane Nesbitt will be greatly missed by the Company, and our sincere condolences are extended to his family.



Year in Review

In 1977 the operations of TransCanada PipeLines included

- **transmission of natural gas to distributors serving over 1½ million customers;**
- **payment of $1,544,472,000 to more than 300 natural gas producers;**
- **payment of $39,519,000 to nearly 500 contractors for the performance of construction and service contracts;**
- **payment of $55,185,000 to more than 1,400 suppliers for materials and equipment;**
- **payment of $36,097,000 in wages, salaries and employee benefits;**
- **payment of $10,300,000 in municipal taxes to nearly 200 municipalities in Saskatchewan, Manitoba, Ontario and Quebec, and $5,897,000 in federal and provincial sales and capital taxes;**
- **payment of $44,863,000 in dividends to its nearly 38,000 common and preferred shareholders**

Gas Supply

Over 80% of Canada's proven gas reserves are located in the provinces of Alberta and British Columbia. Nearly all natural gas being delivered from the TransCanada system to Canadian and United States markets comes from Alberta. In addition to these reserves in the nation's traditional producing areas, reserves of natural gas have been discovered in the Mackenzie Delta region and in the Arctic Islands. TransCanada has been a leading participant in groups studying methods of attaching these frontier reserves to southern markets.

Alberta Reserves

Since November 1, 1975, the price which TransCanada PipeLines pays producers for gas and the price TransCanada PipeLines charges gas distribution companies for gas have been established by a series of agreements reached between the Governments of Canada and Alberta. The current agreement extends to July 31, 1978.

Under these agreements and related legislation the price TransCanada PipeLines has been authorized to pay producers has increased dramatically. In 1975 the average price paid by the Company was 53.9 cents per MMBtu. In 1977 the average price was $1.30 per MMBtu.

The high level of exploration activity experienced in 1976 continued in Alberta during 1977. New discoveries and net appreciation of established gas reserves again exceeded the long term growth rate of 2.6 Tcf.

1977 Purchases

During 1977 the Company completed contract negotiations commenced in 1976, including significant

Welders complete tie-in welds on new pipeline construction in 1977 near Orillia, Ontario


LAKE ATHABASCA
H U D
ALBERTA
SASKATCHEWAN
SASKATCHEWAN
MANITOBA
MANITOBA
ONTARIO
LAKE WINNIPEG
BURSTALL
CABRI
HERBERT
CARON
REGINA
GRENFELL
MOOSOMIN
RAPID CITY
PORTAGE LA PRAIRIE
ILE DE CHENES
SPRUCE
FALCON LAKE
KENORA
DRYDEN
VERMILION BAY
IGNACE
Moose Jaw
Regina
Swift Current
Moosomin
Brandon
Winnipeg
Kenora
Dryden
Emerson
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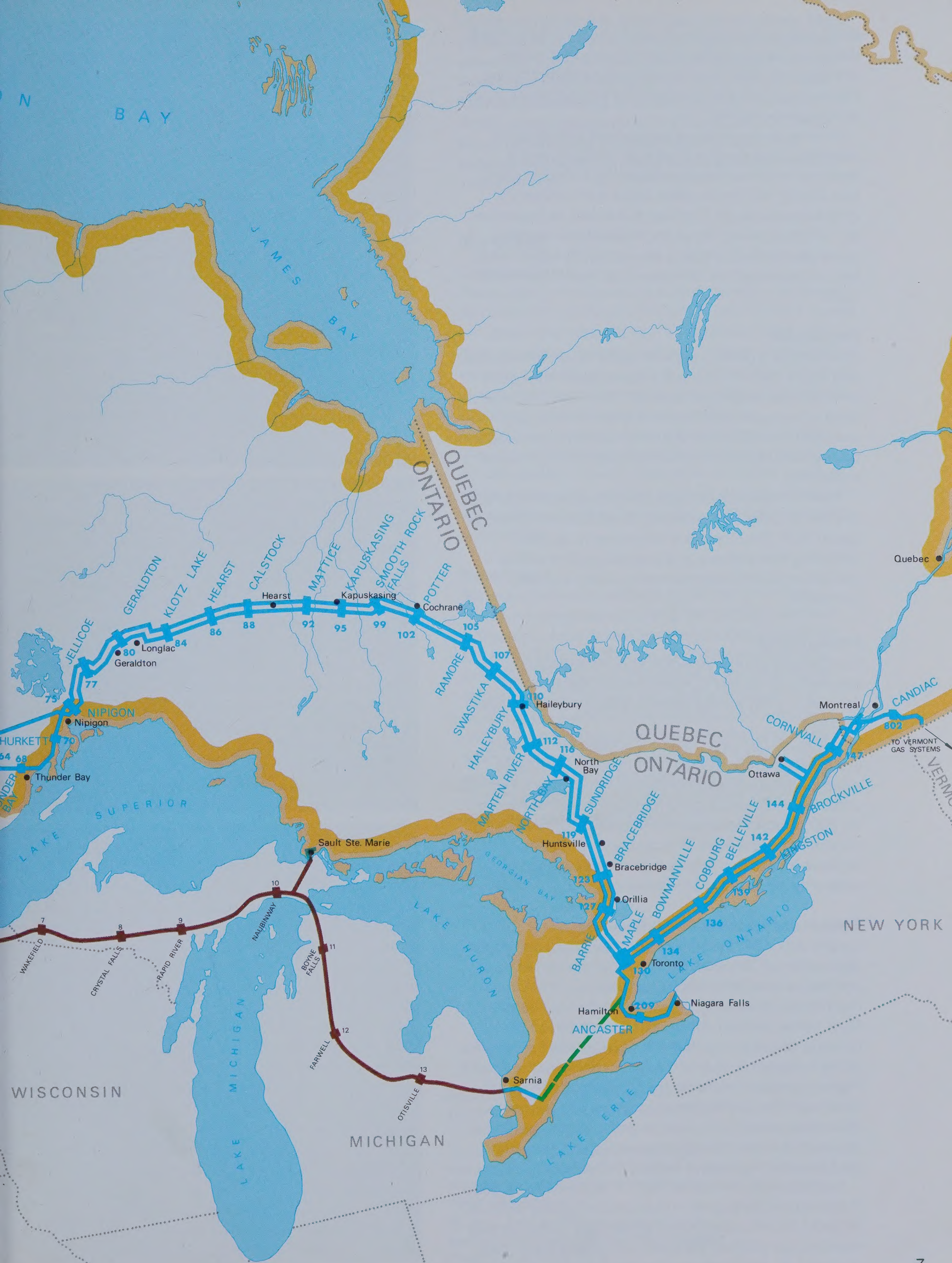
FROM SASKATCHEWAN POWER CORPORATION
FROM CONSOLIDATED NATURAL GAS LIMITED
FROM STEELMAN GAS LIMITED
TO MIDWESTERN GAS TRANSMISSION COMPANY
ST. VINCENT
THIEF RIVER FALLS
SHEVLIN
DEER RIVER
CLOQUET
MONTANA
NORTH DAKOTA
MINNESOTA
Legend
Pipeline
Compressor Station
TransCanada PipeLines System
Great Lakes Gas Transmission System
Union Gas



N BAY
JAMES BAY
QUEBEC
ONTARIO
GERALDTON
KLOTZ LAKE
HEARST
CALSTOCK
MATTICE
KAPUSKASING
SMOOTH ROCK FALLS
POTTER
Hearst
Kapuskasing
Cochrane
JELLICOE
Longlac
Geraldton
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Nipigon
HURKETT
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Thunder Bay
THUNDER BAY
RAMORE
SWASTIKA
HAILEYBURY
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Haileybury
MARTEN RIVER
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116
North Bay
NORTH BAY
SUNDRIDGE
Quebec
Montreal
CANDIAC
CORNWALL
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TO VERMONT GAS SYSTEMS
VERMONT
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Ottawa
BROCKVILLE
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BRACEBRIDGE
BOWMANVILLE
COBOURG
BELLEVILLE
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KINGSTON
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Huntsville
Bracebridge
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Orillia
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MAPLE
BARRIE
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134
Toronto
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NEW YORK
LAKE SUPERIOR
Sault Ste. Marie
GEORGIAN BAY
LAKE HURON
LAKE ONTARIO
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9
WAKEFIELD
CRYSTAL FALLS
RAPID RIVER
NAUBINWAY
11
BOYNE FALLS
12
FARWELL
13
OTISVILLE
Hamilton
209
Niagara Falls
ANCASTER
Sarnia
WISCONSIN
LAKE MICHIGAN
MICHIGAN
LAKE ERIE

purchases in the Limestone and Elmworth Fields. Initial delivery of this gas will commence at various dates extending to 1980. The Company also initiated during 1977 a gas purchasing program for firm deliveries of gas to commence in 1980.

As a result of such purchases and appreciation of reserves under existing contracts, the Company's reserves under contract increased by 4.4 trillion cubic feet. During 1977 production under the Company's contracts was about 1.3 trillion cubic feet. At December 31, 1977 the proved remaining marketable reserves committed to the Company were about 28 trillion cubic feet, an increase from 25 trillion cubic feet at the end of 1976.

Prepaid Gas
The Company paid for approximately seven billion cubic feet of gas, delivery of which was not taken during the contract year ending October 31, 1977. The deferment of production is permitted under the terms of the gas purchase contracts and the volumes will be received in future years, at which time the prepaid amounts will be recovered.

The Company's gas supply position is such that it will pay for but defer taking delivery of additional volumes of gas in 1978. The Company is confident that it will ultimately take delivery of all prepaid gas in the time periods provided under the terms of its purchase contracts.

Alberta Permit
The Company currently holds a permit authorizing it to remove from Alberta 12.4 trillion cubic feet between January 1, 1978 and the permit's expiry date of October 31, 1994.

In August, 1977 the Company applied to the Alberta Energy Resources Conservation Board (AERCB) to increase the volume authorized for removal by 7.4 trillion cubic feet and to extend the removal period to October 31, 2000. Public hearings on this application were conducted by the AERCB in January, 1978 and a decision is pending. The Company's application was supported by 35 out of 36 intervenors.

Alaskan and Mackenzie Delta Reserves
In early July, 1977 the National Energy Board denied the application of Canadian Arctic Gas to connect Alaska and Mackenzie Delta natural gas reserves to southern markets by constructing a pipeline in the Mackenzie River Valley. Instead, the Board recommended the construction of a direct line through Canada from Alaska along the general route of the Alcan Highway (the Alaska Highway project) to enable the connection of Alaskan reserves to the United States' markets. Provision was also made whereby Mackenzie Delta reserves might be attached at a later date by a connecting pipeline along the Dempster Highway in the Yukon Territory.

Subsequently, in August, 1977 TransCanada agreed in principle to participate in the Alaska Highway pipeline project. Under that proposed agreement, TransCanada would acquire 20% of the equity of Foothills Pipe Lines (Yukon) Ltd., the sponsor of the Alaska Highway project, as well as 49% equity ownership in a 160-mile pipeline being planned by Foothills Pipe Lines (Saskatchewan), which would be constructed and operated by TransCanada. TransCanada would also agree to participate in studies of the proposed Dempster Highway line and to acquire up to 49% of the equity involved.

In September, 1977 the Governments of Canada and the United States signed an agreement governing the future construction and operation of the Alaska pipeline. In addition to modifying the route, the question of the size and operating pressure of the line was left for later decision. In February, 1978 the National Energy Board indicated its preference for 56-inch diameter pipe with an operating pressure of 1080 psi. Legislative action to approve the pipeline and provide for its construction and operation was commenced by the Canadian Parliament in February, 1978. Negotiations are continuing between TransCanada and the sponsors of the project.

The operations of Canadian Arctic Gas Pipeline Limited were substantially wound up by the end of 1977.

Arctic Islands Reserves
Throughout 1977, TransCanada continued to give leadership and support to the Polar Gas Project. In December, the initial sections of applications were filed by Polar Gas Limited with the National Energy Board and the Department of Indian Affairs and Northern Development for the necessary approvals to construct and operate a natural gas pipeline from Melville Island in the High Arctic to an interconnection with the TransCanada system at Longlac, Ontario.

These applications were sponsored by TransCanada acting as Project Manager for Polar Gas and by three other participants in the Polar Gas Project — Panarctic Oils Ltd., Ontario Energy Corporation and Tenneco Oil of Canada Limited.

The applications by Polar Gas propose a 2,338 mile pipeline system capable of receiving 2.1 billion cubic feet of natural gas per day. Polar Gas has filed detailed information on physical considerations, location of permanent facilities, system configurations and capabilities, facilities design, connecting facilities, construction plan and operation and maintenance plans for review. Environmental and socio-economic data will be filed by Polar Gas with regulatory authorities during the early part of 1978.

The Polar Gas pipeline will be a substantial project engineered in Canada. A 42-inch diameter natural gas pipeline is proposed to transport the significant gas reserves of the Arctic Islands to southern markets. Consultants to Polar Gas estimate that the reserves to date total approximately 11 trillion cubic feet of natural gas. Polar Gas is confident that the potential of the Arctic Islands is much larger than the 15 to 20 trillion cubic feet needed to support a minimum pipeline system.

The Polar Gas pipeline proposal could ensure that essential new frontier energy reserves are made available to Canadians as demand for more natural gas grows through the 1980's. Besides meeting the deficiency forecast by the National Energy Board, the Polar Gas pipeline could help to reduce Canada's dependence on foreign energy sources and provide

significant net benefits to the Canadian economy. Major capital expenditures would be required, and revenues generated from the development of this vital resource would have a very positive effect on Canada's overall economic well-being. In addition, the connection of the Arctic Islands reserves with the TransCanada system would provide long term assurance of additional supplies that would be available to markets served by TransCanada.

Marketing

Canadian Sales
Total sales by the Company to its domestic customers increased from 808 Bcf in 1976 to 819 Bcf in 1977. As will be noted in the table entitled "Annual Gas Sales and Transportation" most individual Canadian distributors experienced little or no growth. This slow rate of market growth reflected not only the conservation of energy in residential and industrial use, but also the slower-than-normal growth of the national economy. The slower rate of growth was particularly evident in industrial sales, where prospective new sales were lost to imported coal, Canadian lignite and residual fuel oil in areas where regulated retail natural gas prices were not competitive.

Export Sales
Because of severe weather conditions in the United States — some areas recording the coldest weather in 200 years — export sales increased substantially from 264 Bcf in 1976 to 292 Bcf in 1977. This increase was entirely due to exports of emergency supplies of gas commencing in January and ending in March. The exports were made with the assistance of Canadian distribution companies and the utilization of storage fields in southern Ontario. A total of 31.9 Bcf of emergency exports were made. Without emergency exports the total volumes of export sales in 1977 would have been slightly less than in 1976.

Top. Electronic pig being inserted in a pipeline during re-rating program near Thunder Bay, Ontario

Centre. Artist's drawing of a laybarge for use in channels between Canadian Arctic Islands for construction of the proposed Polar Gas pipeline

Bottom. Archaeologists excavating an ancient Inuit campsite near the proposed Polar Gas pipeline route

Future Growth

The Company has offered and continues to offer new long-term contracts to its Canadian customers and is considering an expansion of its pipeline facilities into Quebec to enable the further penetration of natural gas into the Quebec energy markets. Minimal growth in domestic natural gas sales can be expected as long as low-priced heavy oil is available in industrial markets.

Swaps

The Company is presently negotiating with certain U.S. companies with respect to the possibility of swapping gas. Under arrangements contemplated, surplus gas from Alberta could be made available for delivery to the U.S. in the near future, using existing facilities, with equivalent volumes returned to the Company at a later date when required.

Rate Regulation

TransCanada applied to the NEB in March 1978 for rates to become effective August 1, 1978 to recover operating cost increases, and to recover normalized income taxes in respect of the Company's utility income.

The price that the Company pays to its natural gas producers is determined by regulation. Generally speaking it is the amount remaining after the Company's approved cost of service, including the costs in Alberta, has been deducted from the revenues received by the Company from selling gas at prescribed prices.

Several proceedings have been commenced before Alberta regulatory authorities with respect to appropriate costs of service in the Province:

— an inquiry into the principles and methods which should apply to the determination of the Alberta cost of service conducted by the Alberta Public Utilities Board concluded in the fall of 1977.

— the hearing of an appeal by certain Alberta gas producers as to the reasonableness of Alberta Gas Trunk Line's charges with respect to income taxes and depreciation rates recently began before the Public Utilities Board.

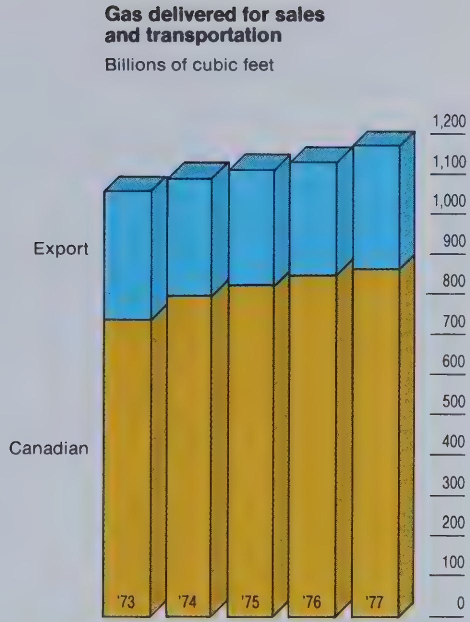
— an appeal to the Alberta Public Utilities Board scheduled for hearing in June 1978 with respect to Alberta Gas Trunk Line's rate of return.

— an appeal to the Alberta Public Utilities Board with respect to the inclusion in the Alberta cost of service of the carrying costs of the payments made for gas which will not be delivered until some future date.

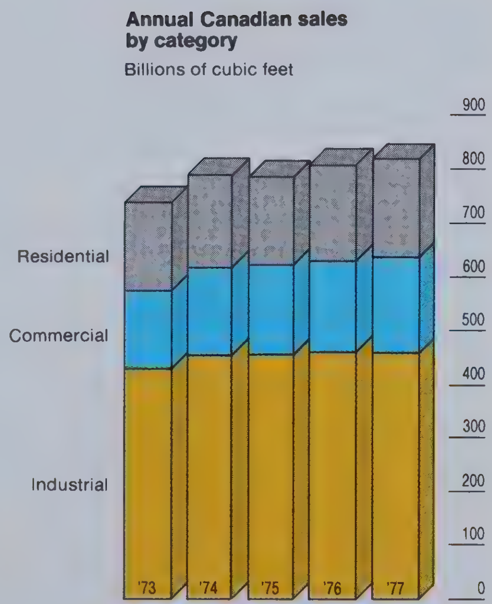
42-inch diameter pipe being installed nea
Portage la Prairie, completing TransCanada
fourth line across western Canad

Annual Gas Sales and Transportation (Volumes in Millions of Cubic Feet)

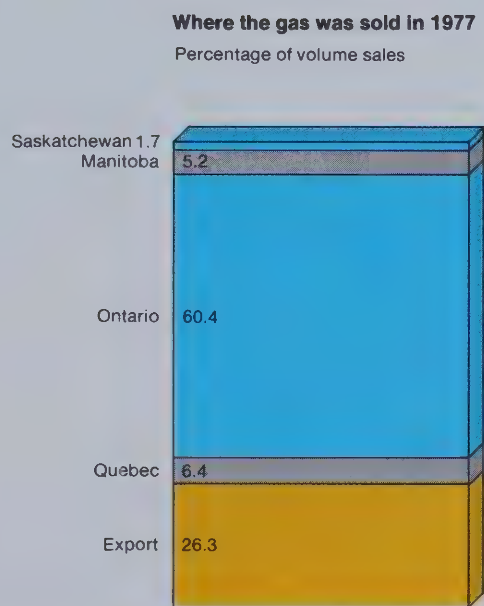
Sales	1977	1976	1975	1974	1973
Saskatchewan Power Corporation	19,439	6,439	2,738	3,902	3,019
Plains-Western Gas (Manitoba) Ltd.	8,507	8,365	8,314	7,986	11,065
Inter-City Gas Limited	8,191	7,739	7,239	7,906	6,659
Northern & Central Gas Corporation Limited					
Ontario Division	122,641	120,710	110,973	117,762	112,020
Greater Winnipeg Gas	45,493	47,560	45,516	50,362	47,100
Gaz Metropolitain, inc.	66,911	66,839	68,876	71,171	59,801
The Consumers' Gas Company	312,310	307,524	304,201	296,140	281,969
Union Gas Limited	233,239	240,575	238,056	232,670	214,909
Kingston Public Utilities Commission	2,374	2,272	2,146	2,141	2,072
Total Canadian	819,105	808,023	788,059	790,040	738,614
Michigan Wisconsin Pipe Line Company	18,250	18,300	18,250	18,250	18,250
Midwestern Gas Transmission Company	117,409	119,315	118,297	119,797	118,931
Great Lakes Gas Transmission Company	106,525	109,496	108,650	110,279	117,355
Inter-City Gas Limited	7,268	7,705	7,206	7,851	7,985
Niagara Gas Transmission Limited	5,956	5,537	5,497	5,556	5,547
Vermont Gas Systems, Inc.	4,263	4,066	4,124	4,891	3,912
Columbia Gas Transmission Corporation	30,000	—	—	—	—
Niagara Mohawk Power Corporation	1,300	—	—	—	—
National Fuel Gas Supply Corporation	599	—	—	—	—
Total U.S. Export	291,570	264,419	262,024	266,624	271,980
Total Sales	1,110,675	1,072,442	1,050,083	1,056,664	1,010,594
Transportation	59,668	55,540	50,467	39,746	45,024
Total Sales and Transportation	1,170,343	1,127,982	1,100,550	1,096,410	1,055,618



Gas delivered for sales and transportation
Billions of cubic feet
Export
Canadian
'73
'74
'75
'76
'77
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0



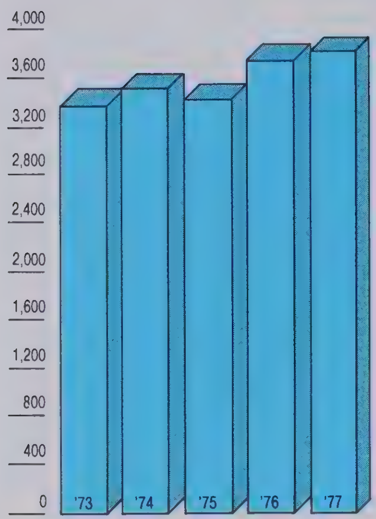
Annual Canadian sales by category
Billions of cubic feet
Residential
Commercial
Industrial
'73
'74
'75
'76
'77
900
800
700
600
500
400
300
200
100
0



Where the gas was sold in 1977
Percentage of volume sales
Saskatchewan 1.7
Manitoba 5.2
Ontario 60.4
Quebec 6.4
Export 26.3

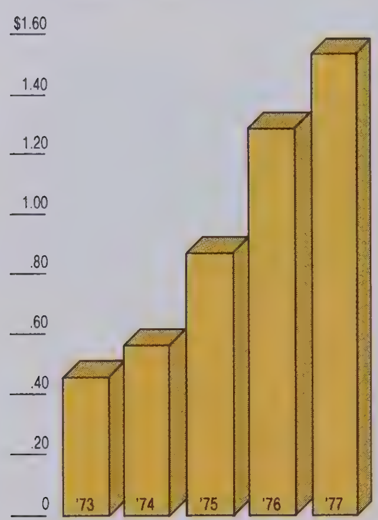
Maximum day gas delivered for sales and transportation

Millions of cubic feet



Average sales rate Canadian sales

Dollars per Mcf



Engineering and Operations

During 1977 the Company expended $88,075,000 on additions and modifications to gas transmission plant. This program of additions and modifications further increased the throughput capacity, provided additional fuel savings and improved the security of the pipeline.

Thirty-five miles of 42-inch diameter third loopline in Saskatchewan, and 22 miles of 42-inch diameter third loopline in Manitoba were constructed and placed in service. This construction completes the fourth pipeline from the Alberta/Saskatchewan border to Winnipeg, Manitoba. Twenty-two miles of 24-inch diameter loopline between Toronto and Montreal were constructed in the first quarter of 1977 completing a second line between Toronto and Montreal. In September, 0.3 miles of 12¾-inch diameter loopline of the Canadian portion of the St. Mary's River crossing was constructed near Sault Ste. Marie, Ontario.

The ongoing program of replacing existing pipe with thicker wall pipe required to meet regulatory and design codes where the population density has increased was continued across the system and included 4.0 miles in the City of North Bay, Ontario. The Company completed in 1977 the program of sandblasting and hydrostatically testing the original 30-inch diameter pipeline between Winnipeg and Toronto.

Between Toronto and Montreal a further 117 miles of the 20-inch diameter original pipeline were requalified to operate at its original pressure by hydrostatic testing and sandblasting.

TransCanada's emphasis on gas conservation within its own transmission system was continued in 1977. Regular tests and inspections were carried out on all compressor units, together with modifications to existing plant, and changes in operating procedures resulted in the equipment operating at optimum efficiency.

Continuing the program to improve the thermal efficiency of gas turbine units, one additional heat exchanger (regenerator) was replaced with a more efficient unit at Compressor Station 30, Rapid City, Manitoba.

The continuing use of mobile gas transfer compressors reduced the amount of gas that would have been vented to atmosphere when the pipeline was removed from operation for new construction, pipe replacement, rerating or requalification purposes, or maintenance.

1978 Program

During 1978 the Company plans to construct 12 miles of 30-inch diameter second loopline in Ontario, previously approved by the National Energy Board.

To meet regulatory and code requirements for operation at an increased pressure, nine miles of 30-inch diameter original pipeline and four miles of 36-inch diameter first loopline between Winnipeg and Toronto will be replaced. In addition, two miles of 24-inch diameter original line in Ontario will be replaced to meet regulatory and code requirements resulting from an

increase in population density.

The requalification of 90 miles of 20-inch diameter original pipeline planned for 1978 will complete this program between Toronto and Montreal. It is also planned to requalify 36.5 miles of the 12¾-inch original Ottawa extension.

Planned additions, modifications and maintenance of existing gas transmission plant will be carried out to further enhance the existing high standards of operating efficiency and gas conservation.

New Brunswick Project

Tenneco LNG Inc., wholly-owned subsidiary of Tenneco Inc. of Houston, Texas, proposes to import liquefied natural gas (LNG) by an eight-tanker service from Algeria to a proposed regasification terminal at Saint John, New Brunswick. TransCanada PipeLines (New Brunswick), a wholly-owned subsidiary of the Company, proposes to build a 66-mile 36-inch pipeline at a cost of approximately $70,000,000 from the regasification terminal to the Maine/New Brunswick border. At the Maine border the gas will be delivered by TransCanada (New Brunswick) to Tenneco Atlantic Pipeline Company (TAPCO), a wholly-owned subsidiary of Tenneco Inc. Operations of the total project are planned to commence in late 1981 and continue for a period of approximately 20 years.

In December, 1977 the National Energy Board conditionally approved the application by TransCanada PipeLines (New Brunswick) for the construction in 1981 of its proposed pipeline. The Board's decision also granted conditional approval for the construction of the regasification terminal by Lorneterm LNG Limited and the import and export of the gas by Tenneco LNG Inc.

In the United States the TAPCO application received initial conditional approval in November, 1977 from an Administrative Law Judge of the Federal Energy Regulatory Commission (FERC). The American Department of Energy (DOE), which includes the FERC, conducted a hearing in early January, 1978 on federal governmental policy for LNG imports dealing with broad policy questions concerning imported LNG. The Algerian gas supply contract with Tenneco LNG Inc. is subject to cancellation as a result of satisfactory decisions not having been received by the end of 1977. The construction of the total project still depends, therefore, upon satisfactory approvals being received from American regulatory authorities within time limits acceptable to the supplier.

Top. Pipe replacement at North Bay, Ontario in early winter 1977
Bottom: A feeder gas line being installed to provide pressure to move an electronic pig through newly installed pipe

Research

High Impact Welding

The Company continued its participation in a joint project to develop a system of welding large-diameter high-grade steel pipe, by the use of explosives. When successfully applied, this system will be of particular interest to pipeline-operating companies, including oil lines and northern pipelines, because it reduces the cost of the joining operation and permits an appreciable extension of the construction season.

Hydrogen/Heavy Water

The Company is also taking part in research into the economics of the production of hydrogen and heavy water utilizing surplus hydro-electric power. Hydrogen would be available as a supplement to TransCanada's gas stream and would be available for special applications, such as ammonia production. Improved second-generation hydrogen cells and the new processes being developed for heavy water may make electrolysis an economic future method of producing both materials.

LNG

TransCanada is continuing studies into the future role of the LNG icebreaking carriers in the Arctic to move natural gas from fields where a pipeline may not be feasible.

LNG carriers operating from King Christian Island to Quebec City may be an economic mode of supplying eastern markets with gas by the middle 1980's.

Electronic Pig

The Company's electronic pig is continuing to prove its usefulness in the inspection of pipelines. The electronic pig program is being extended by the application of computer analyses to assist in the interpretation of results.

Solar Energy

The Company is participating in a Solar Energy Utilization Study in Ontario.

International PipeLine Engineering Limited

International PipeLine Engineering Limited (IPEL) is a wholly-owned subsidiary of TransCanada PipeLines and is engaged in the business of providing engineering services to owners, operators, governmental agencies and others in the pipeline industry in Canada and abroad. In western Canada, contracts involve the electronic inspection survey of pipeline facilities.

In addition, IPEL is currently providing consulting services for Denmark. In Hungary, IPEL will instruct client personnel in the use, structure and features of a compressor station supervisory control software system.

Employees

At the end of 1977, 1,347 men and 207 women worked for TransCanada PipeLines in five Canadian provinces. Ontario led with 1,185 employees, followed by Saskatchewan with 157, Manitoba with 114, Alberta with 87 and Quebec with 11.

Over half of the Company's 1,554 employees participated in special training programs during 1977.

A total of 207 enrolled in supervisory and management courses, and 128 were in clerical courses. A further 278 took various general and specialized technical courses. In preparation for metric conversion 80 secretaries and 31 other employees took special intensive courses in this subject.

A further 68 employees took advantage of the Company's education refund plan.

Shareholders

The number of TransCanada's common shareholders increased by 7.4% from 25,454 at the end of 1976 to 27,341 at the end of 1977. During 1977 the market price per share varied from a low of $12.125 to a high of $16.625. During 1976 the market price per share varied from a low of $10.375 to a high of $13.375.

The geographical breakdown of shareholders and shareholdings is as follows:

	No. of Shareholders	No. of Shares
Alberta	2,761	1,808,905
British Columbia	4,049	1,940,725
Manitoba	1,246	2,266,609
New Brunswick	376	164,174
Newfoundland	43	27,097
Nova Scotia	718	581,007
Ontario	11,602	23,787,769
Prince Edward Island	89	48,021
Quebec	3,123	7,738,078
Saskatchewan	671	182,292
Yukon	6	238
Total Canadian	24,684	38,544,915
United States	2,430	753,719
Others	227	188,979
Total Non-Resident	2,657	942,698
Total	27,341	39,487,613

Organization

A realignment of the management organization of the Company took place in April, 1977 to meet changing conditions in Alberta affairs, gas transmission functions, financial functions, legal and regulatory functions, and corporate services.

As a result of this realignment, existing areas of responsibility were redefined and several new Vice Presidential appointments were made.

The following officers of the Company were either transferred to new areas of responsibilities, or given enlarged areas of responsibility:

J. K. Archambault
Vice President and General Counsel

G. A. Leslie
Vice President, Customer Relations and Planning

C. K. Orr
Vice President, Alberta Affairs

R. D. Walker
Vice President, Gas Transmission

J. G. C. Weir
Vice President, Corporate Services

The following new appointments were made:

G. C. Britton
Vice President, Engineering and Operations - Pipeline

B. M. Escoffery
Vice President, Rates

G. M. Hugh
Vice President, Engineering and Operations - Compression

G. F. Hulme
Vice President, Gas Supply

H. N. Nichols
Vice President and Treasurer

R. F. Sim
Vice President, Personnel and Taxation

K. G. Whiteside
Vice President and Controller

Top. Station 34, Portage la Prairie, Manitoba

Bottom. Construction of a second pipeline crossing under the St. Mary's River near Sault Ste. Marie, Ontario for connection with Great Lakes Gas Transmission Company system

Financial Commentary

As a result of increased sales volumes and higher prices for gas during 1977, operating revenues increased by 25% to $1,870,325,000. Operating expenses, of which 84% is represented by the cost of gas sold, gathering charges and acquisition costs, increased by a corresponding amount in 1977. Operating income increased from $134,932,000 in 1976 to $142,761,000 in 1977. This increase was due primarily to colder than normal weather in central Canada and emergency exports to the United States of 31.9 Bcf last winter.

Volumes of gas delivered for sale and transportation, including the emergency exports, increased 42 Bcf over 1976 to 1,170 Bcf. In addition, the Company delivered into Ontario storage approximately 16 Bcf for sale in 1978.

Consolidated net income before dividends on preferred shares was $86,183,000 in 1977, compared with $79,635,000 in 1976. Net income for 1976 has been restated to include the recovery in 1977 of $2,856,000 in losses resulting from gas measurement problems at Empress, Alberta.

Basic earnings per average common share increased to $2.01 from $1.92. Fully diluted earnings increased to $1.95 from $1.79. Average common shares outstanding were up 8.1% to 39,028,618 as a result of conversion of $2.65 and $2.75 preferred shares.

Dividends declared during the year were 97¢ per common share or 48.3% of basic earnings. On December 6, 1977 the Board of Directors increased the quarterly rate from 23.75¢ to 25.75¢ per common share. This is the maximum permitted by the Anti-Inflation Board. Dividends on preferred shares were lower in 1977 because of the conversion of preferred shares into common shares, and the operation of purchase funds.

Total financial costs of the Company in 1977 including interest payments, reduction of long-term debt through sinking and purchase funds and dividend payments amounted to $182,578,000.

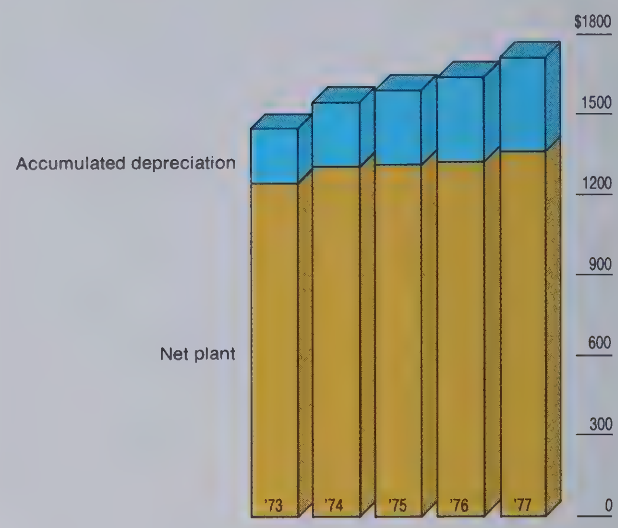
During 1977 the Company deferred production of about 7 Bcf of gas for later delivery. Prepayments to producers for this volume were made on December 30 out of funds received from the sale of promissory notes.

The book value of the Company's common shares at December 31, 1977 was $12.71 per share, up from $11.67 at the end of 1976.

In September, 1977 the Company sold $75,000,000 of 9.60% Sinking Fund Debentures Series G, due 1997. The net proceeds were applied to the cost of the 1977 capital expenditures program.

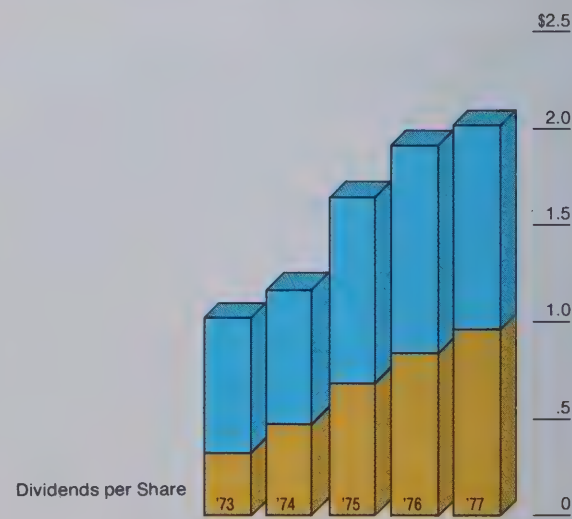
Gas transmission plant growth

Millions of dollars



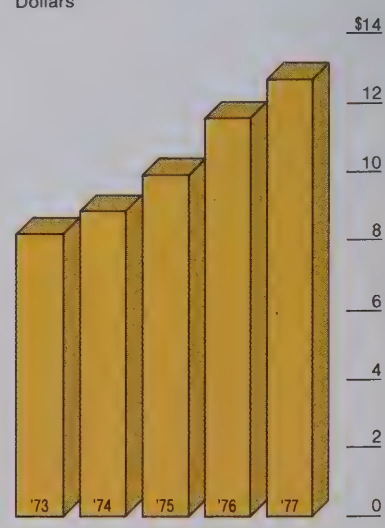
Earnings per Common Share

Dollars



Common Shareholders' Equity per Share at year end

Dollars



Great Lakes Gas Transmission Company

The Company owns a fifty percent interest in Great Lakes Gas Transmission Company, which operates 1,131 miles of pipeline from the international boundary near Emerson, Manitoba, across the States of Minnesota, Wisconsin and Michigan to points on the international border near Sault Ste. Marie and Sarnia, Ontario. The Great Lakes pipeline system consists of 1,061 miles of 36-inch pipe, 11 miles of 24-inch pipe, 15 miles of 12-inch pipe and 44 miles of 10-inch pipe and a total of 345,500 horsepower installed at 13 compressor stations.

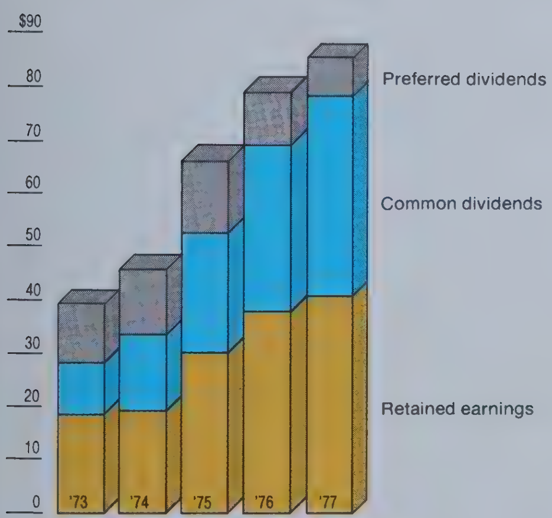
1977 Operations

The 1977 operations of Great Lakes Gas Transmission Company resulted in net income of $19,682,000 compared to $19,832,000 in 1976.

Great Lakes delivered for transportation or sale a total of 421 Bcf of gas of which 289 Bcf, or 69%, were redelivered to TransCanada PipeLines for sale in eastern Canada and 27 Bcf were delivered to Columbia Gas Transmission Corporation to assist in the energy crisis which was experienced by the United States early in 1977. The balance was delivered to other customers in the United States.

The average cost of gas purchased by Great Lakes during 1977 was $1.93 per Mcf, compared to $1.69 per Mcf in 1976. Great Lakes' tariff includes a provision which permits recovery of increased gas costs from its customers.

Distribution of net income
Millions of dollars



Construction

The 1977 construction program amounted to $3,384,000. Included in this amount is approximately $500,000 as Great Lakes' share of the cost of a 12-inch security loop of the pipeline crossing the St. Mary's River at the U.S./Canadian international boundary serving Sault Ste. Marie, Ontario.

The 1978 construction program is estimated to cost $37,232,000 of which $17,965,000 had been expended to December 31, 1977. This program consists of two loopline projects; 31 miles of 36 inch pipeline in Michigan to transport natural gas for storage services being developed by an affiliated company estimated to cost $18,767,000 and 24 miles of 36 inch pipeline in Minnesota for the purpose of compressor fuel savings and security of service estimated to cost $14,843,000.

Debt equity ratio
Percentage

Dividends

During 1977 Great Lakes paid quarterly dividends totalling $12,000,000 and in December, 1977 an extraordinary dividend of $10,000,000.

Tenth Anniversary

September, 1977 marked the tenth anniversary of Great Lakes. During this period the Company delivered for transportation or sale 3.2 trillion cubic feet (Tcf) of western Canadian gas, of which 2.4 Tcf were redelivered to TransCanada PipeLines for sale in eastern Canada and the balance delivered to customers in the United States.

On December 31, 1977, Mr. N. John McNeill retired as Chairman and Chief Executive Officer. Mr. McNeill had been the Chief Executive Officer of Great Lakes since its inception. Prior to his association with Great Lakes, Mr. McNeill had been Senior Vice President and General Counsel for TransCanada PipeLines. Mr. Robert G. Wall, previously Vice President, Finance, of TransCanada PipeLines, was appointed President and Chief Executive Officer of Great Lakes to succeed Mr. McNeill.

Summary Balance Sheet
(Thousands of United States dollars)

Assets	1977	1976
Plant, property and equipment	$362,317	$359,583
Less: accumulated depreciation	97,355	83,622
	264,962	275,961
Current assets	58,182	47,087
Deferred charges	262	392
	$323,406	$323,440

Shareholders' Equity and Liabilities	1977	1976
Common stock	$ 50,000	$ 50,000
Retained earnings	27,761	30,079
First mortgage pipeline bonds	162,500	177,500
Current liabilities	67,972	60,284
Deferred credits	15,173	5,577
	$323,406	$323,440

Summary Statement of Income and Retained Earnings
(Thousands of United States dollars)

	1977	1976
Operating revenues	$293,313	$261,030
Cost of gas sold	168,092	151,534
Operating expenses	63,185	54,462
Depreciation	13,640	13,226
Income taxes	16,686	12,156
Investment tax credit	(1,266)	(5,675)
Interest (net)	13,294	15,495
	273,631	241,198
Net income	19,682	19,832
Retained earnings at beginning of year	30,079	36,247
	49,761	56,079
Dividends declared	(22,000)	(26,000)
Retained earnings at end of year	$ 27,761	$ 30,079
Delivered for transportation or sale (Bcf)	421	409

Preparation for pulling new pipeline across the St. Mary's River at Sault Ste. Marie

Consolidated Statements

Year ended December 31, 1977 (with comparative figures for 1976)

Income

Income	1977	1976
	($000)	($000)
Operating Revenues		
Gas sales	1,851,644	1,482,957
Gas transportation and other	18,681	16,180
	1,870,325	1,499,137
Operating Expenses		
Cost of gas sold, gathering charges and acquisition costs	1,447,720	1,108,613
Transmission by other companies	96,181	95,987
Operation and maintenance	56,719	52,035
Compressor fuel	65,098	48,508
Depreciation	49,252	47,853
Taxes—provincial and municipal	12,594	11,209
	1,727,564	1,364,205
Operating income	142,761	134,932
Other Income		
Allowance for funds used during construction	3,626	2,635
Equity in net income of Great Lakes Gas Transmission Company	9,411	8,329
Other (net)	2,894	3,969
	15,931	14,933
Income before financial charges	158,692	149,865
Financial Charges		
Interest on long-term debt	70,247	71,706
Amortization of debt discount and expense less gain on purchase of debt	1,565	(1,643)
Other interest expense	697	167
	72,509	70,230
Net Income for the Year	86,183	79,635
Net Income Applicable to Common Shares		
Net income for the year (above)	86,183	79,635
Less provision for dividends on preferred shares	7,860	10,456
Net income applicable to common shares	78,323	69,179
Net Income per Common Share		
Basic	$ 2.01	$ 1.92
Fully diluted	1.95	1.79

See accompanying summary of significant accounting policies and notes to consolidated financial statements.

Consolidated Balance Sheet

December 31, 1977 (with comparative figures at December 31, 1976)

Assets	1977 ($000)	1976 ($000)
Plant, Property and Equipment — at cost	1,720,910	1,637,789
Less accumulated depreciation	358,270	315,127
	1,362,640	1,322,662
Investment in Great Lakes Gas Transmission Company — at equity	40,360	41,098
Current Assets		
Cash and short-term investments	3,910	15,886
Accounts receivable	194,444	162,238
Materials and supplies — at cost	12,410	10,921
Line pack and gas stored underground — at cost	63,347	32,153
Prepayments and deposits	8,468	265
	282,579	221,463
Deferred Charges		
Unamortized debt discount and expense	15,126	14,462
Arctic pipeline projects	8,533	6,333
Capital stock expense	—	2,474
Other	9,240	6,504
	32,899	29,773
	1,718,478	1,614,996

See accompanying summary of significant accounting policies and notes to consolidated financial statements.

Shareholders' Equity and Liabilities

	1977 ($000)	1976 ($000)
Shareholders' Equity		
Capital stock (Note 1)		
First preferred shares of the par value of $50.00 per share		
Authorized — 7,122,297		
Outstanding		
— $2.80 cumulative redeemable shares 1977 — 782,821 (1976 — 804,680)	39,141	40,234
— $2.75 cumulative redeemable convertible shares — series A 1977 — 32,478 (1976 — 70,519)	1,624	3,526
— $4.50 cumulative redeemable retractable shares — series B 1977 — 1,000,000 (1976 — 1,000,000)	50,000	50,000
Second preferred shares of the par value of $50.00 per share		
Authorized — 7,367,805		
Outstanding		
— $2.65 cumulative redeemable convertible shares — series A 1977 — 261,583 (1976 — 556,016)	13,079	27,801
Common shares of the par value of 33⅓¢ per share		
Authorized — 75,000,000		
Outstanding		
1977 — 39,487,613 (1976 — 38,248,159)	13,162	12,749
	117,006	134,310
Contributed surplus	263,486	249,005
Retained earnings	225,131	184,656
	605,623	567,971
Long-Term Debt (Per Schedule and Note 2)	822,299	809,701
Current Liabilities		
Long-term debt due within one year	52,831	47,615
Notes payable	11,000	—
Accounts payable	193,333	158,008
Interest accrued	21,355	20,512
Dividends payable	12,037	11,189
	290,556	237,324
	1,718,478	1,614,996

On behalf of the Board:

J. W. Kerr, Director

J. Ross Tolmie, Director

Consolidated Statements

Year ended December 31, 1977 (with comparative figures for 1976)

Contributed Surplus

	1977 ($000)	1976 ($000)
Balance at beginning of year	249,005	160,692
Premium on common shares issued (Note 1)	16,626	90,179
Credit resulting on redemption of preferred shares (Note 1)	329	1,105
	265,960	251,976
Capital stock expense written off	2,474	2,971
Balance at end of year	263,486	249,005

Retained Earnings

	1977 ($000)	1976 ($000)
Balance at beginning of year as previously reported	181,800	146,395
Prior period adjustment (Note 5)	2,856	—
Balance at beginning of year as restated	184,656	146,395
Net income for the year	86,183	79,635
	270,839	226,030
Dividends declared		
Preferred	7,786	9,960
Common	37,922	31,414
	45,708	41,374
Balance at end of year (Note 3)	225,131	184,656

Changes in Financial Position

	1977 ($000)	1976 ($000)
Source of Funds		
Funds provided from operations	131,744	127,161
Dividends from Great Lakes Gas Transmission Company	10,149	10,848
Net proceeds from issue of securities		
Long-term debt	73,499	50,000
Common shares	870	447
	216,262	188,456
Use of Funds		
Additions to gas transmission plant (net)	88,075	53,747
Arctic pipeline projects	5,495	3,314
Reduction of long-term debt	63,142	58,659
Reduction of notes payable	—	20,000
Purchase and cancellation of preferred shares	1,219	3,529
Dividends on preferred and common shares	45,708	41,374
Other (net)	4,739	3,347
Increase in working capital during the year	7,884	4,486
	216,262	188,456

See accompanying summary of significant accounting policies and notes to consolidated financial statements.

Consolidated Schedule of Long-Term Debt

	1977 ($000)	1976 ($000)
First mortgage pipe line bonds		
Due 1978		
5¼% U.S. series — U.S. $5,786,000	5,786	11,594
5½% Canadian series	1,308	2,632
6¼% U.S. series — U.S. $790,000	790	1,246
6¾% Canadian series	311	589
Due 1983		
5¾% U.S. series — U.S. $30,526,000	32,876	38,498
6¼% Canadian series	14,693	17,207
Due 1985		
5⅛% U.S. series — U.S. $17,621,000	19,006	21,428
Due 1987		
6⅝% U.S. series — U.S. $69,600,000	75,002	82,244
Due 1992		
8¾% Canadian series A	82,400	88,450
8¾% Canadian series B	34,400	36,640
Due 1993		
8⅜% Canadian series A	56,844	60,215
8⅜% Canadian series B	8,880	9,440
	332,296	370,183
Sinking fund debentures		
Due 1990		
10% series A	44,660	45,260
9¾% series B	53,600	54,695
Due 1991		
9% series C	43,660	46,250
Due 1992 (Sinking fund commences in 1978)		
8⅞% series D	90,838	93,088
Due 1993 (Sinking fund commences in 1979)		
9% series E	91,800	93,750
Due 1995 (Sinking fund commences in 1981)		
11½% series F	50,000	50,000
Due 1997 (Sinking fund commences in 1983)		
9.60% series G	75,000	—
	449,558	383,043
Subordinated debentures		
Due 1987		
5.60% U.S. series — U.S. $14,583,000	14,583	15,277
5.85% Canadian series	37,767	39,717
	52,350	54,994
Income debentures		
Due 1977 to 1981		
7¼% series A to E	40,000	50,000
	874,204	858,220
Less — long-term debt due within one year		
Canadian $52,831,000 (1976 — $47,615,000)	51,905	48,519
	822,299	809,701

See note 2 to consolidated financial statements.

Consolidated Statements

December 31, 1977

Summary of Significant Accounting Policies

Regulation — The Company, which owns a natural gas transmission system extending from the Alberta-Saskatchewan border across the Provinces of Saskatchewan, Manitoba and Ontario and through a portion of the Province of Quebec, is subject to the jurisdiction of certain regulatory bodies in connection with matters such as rates, construction, operations and accounting. In addition, the Company is subject to the provisions of the Anti-Inflation Act.

The Company shares equally in the ownership of Great Lakes Gas Transmission Company, a United States corporation. Great Lakes, which owns and operates a pipeline system extending from Emerson, Manitoba through Minnesota, Wisconsin and Michigan to Sarnia, Ontario, transports a substantial volume of gas for the Company.

Principles of consolidation — The consolidated financial statements include the accounts of the Company and its subsidiaries all of which are wholly owned. The operations of the active subsidiary company are relatively minor in comparison to the transmission operations of the Company and have therefore been included in the consolidated statement of income under the caption "Other Income — Other". The Company uses the equity method of accounting for its investment in Great Lakes Gas Transmission Company and has provided for withholding taxes on its share of the earnings of Great Lakes which may be distributed.

Income taxes — As allowed by the relevant income tax provisions and regulations, the Company has followed the practices and principles of claiming certain deductions for income tax purposes in excess of the amounts charged to income for accounting purposes. As a result the Company has not paid any income taxes to date. If the relevant income tax provisions and regulations had not permitted such deductions, income taxes would have been payable in the approximate amount of $38,700,000 for 1977 ($35,300,000 for 1976) and to an accumulated amount of $235,100,000 at December 31, 1977.

In June, 1975, the National Energy Board disallowed the Company's request to include currently in cost of service any allowance for income taxes on utility income calculated on a tax allocation basis. Because of this decision and since there is reasonable expectation that all income taxes payable by the Company in the future will be included in cost of service and recovered in revenues at that time, the Company is following the taxes payable basis of accounting for both accounting and rate making purposes.

Depreciation — The Company's provision for depreciation expense is calculated on a straight-line basis using rates reflecting the economic and physical life of the assets in service. It is the policy of the National Energy Board to permit the recovery of undepreciated plant costs over the remaining service life of the assets as determined from time to time.

Depreciation is calculated using approved rates of 2¾% for pipeline, 3½% for compressor stations and other transmission plant and various rates for general plant equipment.

Allowance for funds used during construction — An allowance for funds used during construction has been charged to plant, property and equipment at a rate of 10.5% per annum.

Unamortized debt discount and expense — These costs are amortized by charges to expense over the remaining original life of the respective issues or as debt is retired.

Arctic pipeline projects — The Company is amortizing accumulated costs for both the Canadian Arctic Gas and Polar Gas Projects. Costs incurred to December 31, 1976 are being written off to operating expenses over three years as recovered in cost of service. The Company will apply to the National Energy Board to recover advances subsequent to that date of $5,495,000 on the same basis.

Capital stock expense — In 1977 the unamortized portion of capital stock expense incurred in connection with the issue of $4.50 first preferred shares and $2.65 second preferred shares was written off to contributed surplus with the approval of the National Energy Board. Previously, this capital stock expense was amortized to contributed surplus as the shares were purchased for cancellation or converted into common shares.

Deferred charges — other — Included in deferred charges — other are deferred costs of transmission by other companies amounting to $7,007,000, which represent the difference between the actual transportation costs incurred and the authorized costs included in cost of service. As directed by the National Energy Board, these deferred costs will be included in cost of service in a subsequent rate application.

Also included are unamortized owning costs amounting to $1,929,000, which represent the balance of deferred interest costs associated with the 1972 pipeline expansion program in northern Ontario. These costs are being amortized to operating expenses, as approved by the National Energy Board.

Translation of foreign currency — Transactions originating in foreign currency have been translated to their Canadian equivalent using the rates in effect as indicated:

Current assets and liabilities	year end rates
Investment in Great Lakes Gas Transmission Company:	
Common shares	rates in effect at dates of investment
50% interest in net income	month end rates
Long-term debt due after one year	greater of par or rate in effect on dates of issue

Net income per common share — Net income per common share is calculated using the weighted average number of common shares outstanding during the respective fiscal years. The calculation of net income per common share on a fully diluted basis assumes conversion of all securities and exercise of all rights which have a dilutive effect on earnings per share.

Notes to Consolidated Financial Statements

1. Capital Stock

Changes in the number of shares outstanding during 1977 are set out in the table below. Consideration in excess of the par value of shares issued is credited to contributed surplus.

		First Preferred Shares			Second Preferred Shares
	Common Shares	$2.80 Series	$2.75 Series A	$4.50 Series B	$2.65 Series A
Number of shares outstanding at January 1, 1977	38,248,159	804,680	70,519	1,000,000	556,016
Issued for cash under stock option plan	85,872				
Conversion of preferred shares	1,153,582		(38,041)		(285,331)
Purchase of preferred shares for cancellation		(21,859)			(9,102)
Number of shares outstanding at December 31, 1977	39,487,613	782,821	32,478	1,000,000	261,583

At December 31, 1977, 270,856 common shares were reserved for issuance upon exercise of options granted or which may be granted under the terms and conditions of the Company's Incentive Stock Option Plan. There were outstanding options on 263,453 shares under this plan at prices varying from $8.73 to $15.08, the last of which expires in 1987. During 1977, options on 85,872 common shares were exercised for $870,000.

The Company is required to maintain purchase funds for the $2.80 first preferred shares, the $2.75 convertible first preferred shares and the $2.65 convertible second preferred shares. Subject to certain conditions, the purchase funds are replenished annually on February 1 to an amount equal to 2% of the par value of the shares outstanding on the previous December 31.

In the case of the $4.50 retractable first preferred shares, the Company is required on each February 1, from 1975 until 1984, to credit the lesser of $1,500,000 or the aggregate par value of the remaining shares then outstanding to a purchase fund for these shares.

These various purchase funds are applied, subject to certain conditions, to purchase those preferred shares for cancellation to the extent, if any, that such shares are available at a price not exceeding $50.00 per share plus costs of purchase. To date, preferred shares have been purchased and cancelled on account of the $2.80 first preferred shares and the $2.65 second preferred shares.

In addition to the above purchase fund obligations, it is the intention of the Company to purchase for cancellation during each 12 month period ending January 31 to and including January 31, 1980, to the extent available at a price per share not exceeding $50.00 plus costs of purchase, an additional $1,000,000 aggregate par value of $4.50 retractable first preferred shares.

The principal features of the preferred shares, all of which are cumulative and redeemable, are summarized below. The $4.50 first preferred shares also have a retractable feature which requires the Company, subject to certain conditions, to invite tenders once during each six month period ending January 31, 1980 and January 31, 1985 for the purchase of all such retractable shares at $50.00 per share plus accrued and unpaid dividends.

	Redeemable	Conversion to Common Shares Price*	Rate	Expiry Date	Common Shares Reserved
$2.80 first preferred shares	$50.50 per share	—	—	—	—
$2.75 convertible first preferred shares	$52.50 per share to April 30, 1978 and reducing in progressive steps to $50.50 per share after April 30, 1984	$ 8.97	5-4/7	May 1, 1978	180,983
$4.50 retractable first preferred shares	$54.50 per share commencing February 1, 1980 and reducing in progressive steps to $50.00 per share after January 31, 1985	—	—	—	—
$2.65 convertible second preferred shares	$52.50 per share to April 30, 1982 and reducing in progressive steps to $50.50 per share after April 30, 1988	$15.15	3-3/10	May 1, 1982	863,235

*Price may be adjusted under certain conditions to protect against dilution and represents the price per common share to the nearest cent.

2. Long-Term Debt

The Deed of Trust and Mortgage securing the first mortgage pipe line bonds provides for a first charge upon all the real and immoveable property and rights of the Company and a floating charge on all the remaining assets. It also provides for increased sinking fund payments if a Certificate of Gas Supply indicates exhaustion of gas supply earlier than specified dates. As required, the Company's gas purchase, sales and gas products sales contracts and the contracts with The Alberta Gas Trunk Line Company Limited and Great Lakes Gas Transmission Company are mortgaged and pledged under the Deed of Trust and Mortgage.

Under the provision of the Indenture relating to the sinking fund debentures the Company will apply, subject to certain conditions, an annual amount equal to 2% of the aggregate principal amount, separately for each issue, for the purchase in the market of the debentures in each of the five years immediately preceding the establishment of the respective sinking funds. These purchase funds are presently operative and debentures are being purchased to the extent that they are available at prices, including cost of purchase, that do not exceed the principal amount plus accrued interest to the date of purchase. The purchased debentures are delivered to the Trustee for cancellation.

In addition to the above purchase fund requirements, mandatory retirements of long-term debt under sinking fund and other obligations approximate $53,000,000 for 1979, $53,000,000 for 1980, $59,000,000 for 1981 and $50,000,000 for 1982.

Based on the rate of exchange prevailing at December 31, 1977 $128,539,000 would be required to discharge the long-term portion of the U.S. currency debt outstanding at December 31, 1977. Such long-term debt is repayable over a period extending to 1987 and is included in the Consolidated Schedule of Long-Term Debt in the amount of $125,489,000 at December 31, 1977.

3. Restriction on Dividends

Declaration of dividends on both preferred and common shares is restricted under certain preferred share provisions and under several debt instruments. At December 31, 1977, under the most restrictive provisions $171,900,000 was available for payment of dividends on common shares.

Under the terms of the Anti-Inflation Act the Company's ability to increase dividends on common shares is restricted. The current rate of dividends is the maximum permitted.

4. Remuneration of Directors and Officers

The aggregate remuneration paid by the Company to thirteen directors, none of whom are officers of the Company, amounted to $134,000. In addition there are three directors who as officers of the Company received no remuneration as directors. The aggregate remuneration paid to twenty officers amounted to $1,235,000.

5. Prior Period Adjustment — 1976 — Operation and Maintenance Expense
In 1977, the Company recovered losses incurred in 1976 because of gas measurement problems at Empress, Alberta, the point of receipt into the Company's pipeline system. As a result, previously reported net income for 1976 increased by $2,856,000, and basic and fully diluted earnings per share for that year increased by 8¢ and 7¢ respectively.

6. Pending Proceedings
Saskatchewan Power Corporation has challenged the jurisdiction of the National Energy Board with respect to a 1969 gas contract with the Company. The Board has confirmed its jurisdiction in this matter, and later the Federal Court of Appeal upheld the decision of the Board. However, Saskatchewan Power Corporation has appealed to the Supreme Court of Canada. In addition, Saskatchewan Power has appealed to the Federal Court of Appeal the National Energy Board's setting of rates to be charged by TransCanada for gas sold under the contract.

In both of the foregoing appeals the validity of certain provisions of the National Energy Board Act has been brought into question. If the provisions of the National Energy Board Act are found to be invalid or to be more limited in scope than has been considered heretofore, the Company's rates, tolls and tariffs may be regulated in a manner different than at the present. In the opinion of counsel to the Company the National Energy Board Act is valid legislation and the Board has properly exercised its jurisdiction in setting rates.

7. Foothills — Yukon Project
The Company is continuing its discussions with Foothills Pipe Lines (Yukon) Ltd. in connection with its proposed participation in the Foothills - Yukon Project.

Auditors' Report

PEAT, MARWICK, MITCHELL & CO.
CHARTERED ACCOUNTANTS
Commerce Court West
P. O. Box 31, Commerce Court Postal Station
Toronto, Ontario
M5L 1B2

Auditors' Report to the Shareholders

We have examined the consolidated balance sheet of TransCanada PipeLines Limited as at December 31, 1977 and the consolidated statements of income, retained earnings, contributed surplus and changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these consolidated financial statements present fairly the financial position of the company as at December 31, 1977 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Toronto, Canada
January 26, 1978

Peat, Marwick, Mitchell & Co.
Chartered Accountants

Five Year Summary

	1977	1976	1975	1974	1973
Income (in thousands of dollars)					
Operating Revenues					
Gas sales	$1,851,644	$1,482,957	$ 901,167	$ 561,255	$ 430,382
Gas transportation and other	18,681	16,180	19,222	6,687	6,421
	1,870,325	1,499,137	920,389	567,942	436,803
Operating Expenses					
Cost of gas sold, gathering charges and acquisition costs	1,447,720	1,108,613	601,013	316,691	227,269
Transmission by other companies	96,181	95,987	78,066	60,767	60,856
Operation and maintenance	56,719	52,035	37,844	27,915	22,673
Compressor fuel	65,098	48,508	27,244	16,697	12,524
Depreciation	49,252	47,853	39,136	34,463	28,344
Taxes—provincial and municipal	12,594	11,209	9,236	7,462	5,760
	1,727,564	1,364,205	792,539	463,995	357,426
Operating income	142,761	134,932	127,850	103,947	79,377
Other Income					
Equity in net income of Great Lakes Gas Transmission Company	9,411	8,329	6,670	6,098	6,022
Other income (net)	6,520	6,604	2,211	5,013	12,071
Income before financial charges	158,692	149,865	136,731	115,058	97,470
Financial Charges (net)	72,509	70,230	70,434	69,476	57,958
Net Income for the Year	86,183	79,635	66,297	45,582	39,512
Provision for dividends on preferred shares	7,860	10,456	13,863	12,119	11,508
Net Income Applicable to Common Shares	$ 78,323	$ 69,179	$ 52,434	$ 33,463	$ 28,004
Net Income per Average Common Share					
Basic	$ 2.01	$ 1.92	$ 1.65	$ 1.17	$ 1.01
Fully diluted	$ 1.95	$ 1.79	$ 1.45	$ 1.03	$ .92
Dividends declared, per common share	$ .97	$ .85¾	$ .69	$ .48⅓	$ .33⅓
Dividend payout ratio, common shares	% 48.26	% 44.66	% 41.82	% 41.31	% 33.00
Funds provided from operations	$ 131,744	$ 127,161	$ 105,220	$ 73,664	$ 58,706
—per average common share	$ 3.38	$ 3.52	$ 3.31	$ 2.57	$ 2.11
Balance Sheet (in thousands of dollars)					
Plant, property and equipment—gross	$1,720,910	$1,637,789	$1,588,754	$1,555,506	$1,449,925
—net	1,362,640	1,322,662	1,315,545	1,314,992	1,240,782
Annual additions	88,075	53,747	38,435	108,578	194,743
Long-term debt	822,299	809,701	819,797	820,075	861,335
Shareholders' equity—total	605,623	567,971	535,762	508,391	440,179
—common	501,779	446,411	317,755	276,903	228,461
—per common share at year end	12.71	11.67	9.93	8.91	8.20
Statistics					
Miles of pipeline—including loopline	5,800	5,720	5,678	5,678	5,367
Compressor horsepower	951,490	951,490	950,690	950,690	944,390
Gas delivered for sales and transportation—annual	1,170,343	1,127,982	1,100,550	1,096,410	1,055,618
(in millions of cubic feet) —maximum day	3,819	3,741	3,431	3,531	3,394
Number of employees—average	1,590	1,541	1,460	1,460	1,413
Common shares outstanding—year end	39,487,613	38,248,159	32,005,509	31,077,790	27,859,257
—average	39,028,618	36,117,610	31,746,810	28,687,701	27,781,065
Number of shareholders, December 31	27,341	25,454	24,244	24,302	24,984

Note: The above FIVE YEAR SUMMARY excludes the extraordinary gain of $12,461,000 realized in 1973 on the sale of TransCanada Petroleums Limited, reflects the three-for-one split of common shares effected in June, 1974 and a restatement of 1976 earnings increasing net income by $2,856,000.

Shareholders and others desiring information on TransCanada PipeLines may obtain a ten year summary by requesting a copy of the booklet "Operating and Statistical Information 1968-1977" from Mr. H. N. Nichols, Vice President and Treasurer, TransCanada PipeLines, P.O. Box 54, Commerce Court West, Toronto, Ontario, M5L 1C2.

Corporate Information

Executive Office
P.O. Box 54, Commerce Court West, Toronto, Ontario, M5L 1C2

Head Office
407 Eighth Avenue S.W., Calgary, Alberta, T2P 2M7

Subsidiary (Wholly Owned)

International PipeLine Engineering Limited
A company carrying on the business of engineering, design and supervision of construction of pipelines and associated facilities.

Affiliate (50% Owned)

Great Lakes Gas Transmission Company
A Delaware company owning and operating a pipeline through the United States from Emerson, Manitoba to Sault Ste. Marie and Sarnia, Ontario.

Common Shares

Transfer Agents
Montreal Trust Company, Montreal, Toronto, Winnipeg, Regina, Calgary and Vancouver. Citibank, N.A., New York.

Registrars
National Trust Company, Limited, Toronto.
The Canadian Bank of Commerce Trust Company, New York.

Preferred Shares

$2.80 cumulative redeemable first preferred shares.
$2.75 cumulative redeemable convertible first preferred shares series A.
$4.50 cumulative redeemable retractable first preferred shares series B.
$2.65 cumulative redeemable convertible second preferred shares series A.

Transfer Agents and Registrars
$2.80, $2.75 and $2.65 National Trust Company, Limited, Montreal, Toronto, Winnipeg, Calgary and Vancouver.
$4.50 Royal Trust Company, Montreal, Toronto, Winnipeg, Regina, Calgary and Vancouver.

Bonds

Trustee
National Trust Company, Limited, Toronto.

Registrar Canadian Series
5½%, 6¼% and 6¾% first mortgage pipeline bonds, National Trust Company, Limited, Montreal and Toronto.
8¾% and 8⅜% first mortgage pipeline bonds, National Trust Company, Limited, Montreal, Toronto, Winnipeg, Calgary and Vancouver.

Registrar U.S. Series
5⅛%, 5¼%, 5¾%, 6¼% and 6⅝% first mortgage pipeline bonds, Morgan Guaranty Trust Company of New York.

Sinking Fund Debentures

Trustee
Crown Trust Company, Toronto.

Registrar
10% series A, 9¾% series B, 9% series C, 8⅞% series D, 9% series E, 11½% series F and 9.60% series G sinking fund debentures. Crown Trust Company, Montreal, Toronto, Winnipeg, Calgary and Vancouver.

Subordinated Debentures

Trustee
Montreal Trust Company, Toronto.

Registrar Canadian Series
5.85% subordinated debentures, Montreal Trust Company, Montreal, Toronto, Winnipeg, Calgary and Vancouver.

Registrar U.S. Series
5.60% subordinated debentures, Citibank, N.A., New York.

Compressor Station 136, Grafton, Ontario

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